CLAIMS

1. Method for sending a signal formed by successive vectors each comprising N symbols to be sent, and implementing at least two transmitter antennas,

characterized in that a distinct sub-matrix is associated with each of said antennas, said sub-matrices being obtained by subdivision of a unitary square matrix, and in that each of said antennas sends sub-vectors, obtained by subdivision of said vectors, respectively multiplied by said sub-matrices,

so as to form, as seen from a receiver, a single combined signal representing the multiplication of said vectors by said unitary matrix.

2. Transmission method according to claim 1, implementing Nt antennas, characterized in that each of said sub-matrices has a size of (N/Nt) x N.

3. Transmission method according to claim 2, characterized in that N/Nt is greater than or equal to 2.

4. Transmission method according to any of the claims 1 to 3, characterized in that said unitary matrix is full.

5. Transmission method according to any of the claims 1 to 4, characterized in that said unitary matrix belongs to the group comprising:

- the real Hadamard matrices;
- the complex Hadamard matrices;
- the Fourier matrices;
- the real rotation matrices;
- the complex rotation matrices.

6. Transmission method according to any of the claims 1 to 5, characterized in that it implements two transmitter antennas and in that said sub-matrices have a value of [1 1] and [1 -1].

7. Transmission method according to any of the claims 1 to 5, characterized in that it implements two transmitter antennas and in that said sub-matrices have a value of $\frac{1}{\sqrt{2}}\begin{bmatrix}1 & 1 & 1 & 1\\ 1 & -1 & 1 & -1\end{bmatrix}$ and $\frac{1}{\sqrt{2}}\begin{bmatrix}1 & 1 & -1 & -1\\ 1 & -1 & -1 & 1\end{bmatrix}$.

8. Transmission method according to any of the claims 1 to 5, characterized in that it implements four transmitter antennas and in that said sub-matrices have a

value of [1 1 1 1], [1 -1 1 -1], [1 1 -1 -1] and [1 -1 -1 1].

9. Method for the reception of a signal sent according to the transmission method of any of the claims 1 to 8, characterized in that it implements at least one receiver antenna, and in that it receives said single combined signal on each of said receiver antennas, and in that it decodes said single combined signal by means of the decoding matrix corresponding to a matrix that is the conjugate transpose of said unitary matrix.

10. Reception method according to claim 9, characterized in that a maximum likelihood decoding is applied to the data coming from the multiplication by said conjugate transpose matrix.

11. Signal sent according to the transmission method of any of the claims 1 to 8, characterized in that it corresponds to the combination of the contributions of each of said transmitter antennas,

a distinct sub-matrix being associated with each of said antennas, said sub-matrices being obtained by subdivision of a unitary square matrix and in that each of said antennas sends sub-vectors, obtained by subdivision of said vectors, respectively multiplied by said sub-matrices,

and in that it forms, seen from a receiver, a single combined signal representing the multiplication of said vectors by said unitary matrix.